Recommendations

Chapter 4

Based on the previous chapters of this master plan, this chapter describes the general bikeway system improvements recommended for the City of Chula Vista. These include physical improvements, as well as policy and program recommendations.

The following recommendations are intended to take advantage of existing and programmed roadways and existing bicycle facilities to resolve cyclists' concerns for safety and connectivity. The City of Chula Vista has an almost complete system of Class 2 bikeways along its major roadways in the eastern portion of the City, and expects to have Class 2 facilities installed on the future portions of those roadways, as well. Full implementation of the programmed Class 2 facilities would provide a complete Class 2 system.

Class 3 routes crisscross Chula Vista's older western section, whose configuration best fits the traditional grid street pattern with its frequently limited rights-of-way. There are currently a few Class 3 routes east of I-805 and several additional Class 3 route are proposed, primarily to provide safe routes to schools.

Chula Vista already has an extensive system of Class 2 lanes and 3 routes, seven Class 1 facilities and a substantial amount of open space. The Bayshore Bikeway will be substantially Class 1 and the potential exists for creating a Class 1 path along a planned transit corridor. The proposed greenbelt system should also take advantage of the opportunities presented by available open space.

The final sections of this chapter address a number of policy and program recommendations. These were based on the League of American Bicyclists' guidelines for bicycle friendly communities and additional recommendations tailored to the City of Chula Vista. These "intangible" improvements, in tandem with physical facilities, can have a profound effect in encouraging more people to ride their bicycles instead of automatically reaching for their car keys.

4.1 Recommended Bikeway Facilities

The recommended bikeway system was derived from SANDAG's planned regional bikeway system, the 2005 City of Chula Vista Bikeway Master Plan, City and public input, field work, state-of-the-art literature review and extensive GIS analysis. (See Figure 13: Recommended Bicycle Facilities.) To illustrate the overall system in its city-wide context, Figure 13 shows all of the recommended and existing bikeway facilities. For clarity, three additional figures are included that show one facility class only with each segment keyed to an associated spreadsheet. The following sections describe these bikeway types in general terms. See the spreadsheets for more detail and the remarks in the last column of the spreadsheets for selection rationale. Detailed cost analyses for each segment are provided in Appendix C. Prioritization and selection methodology is described in Appendix D.

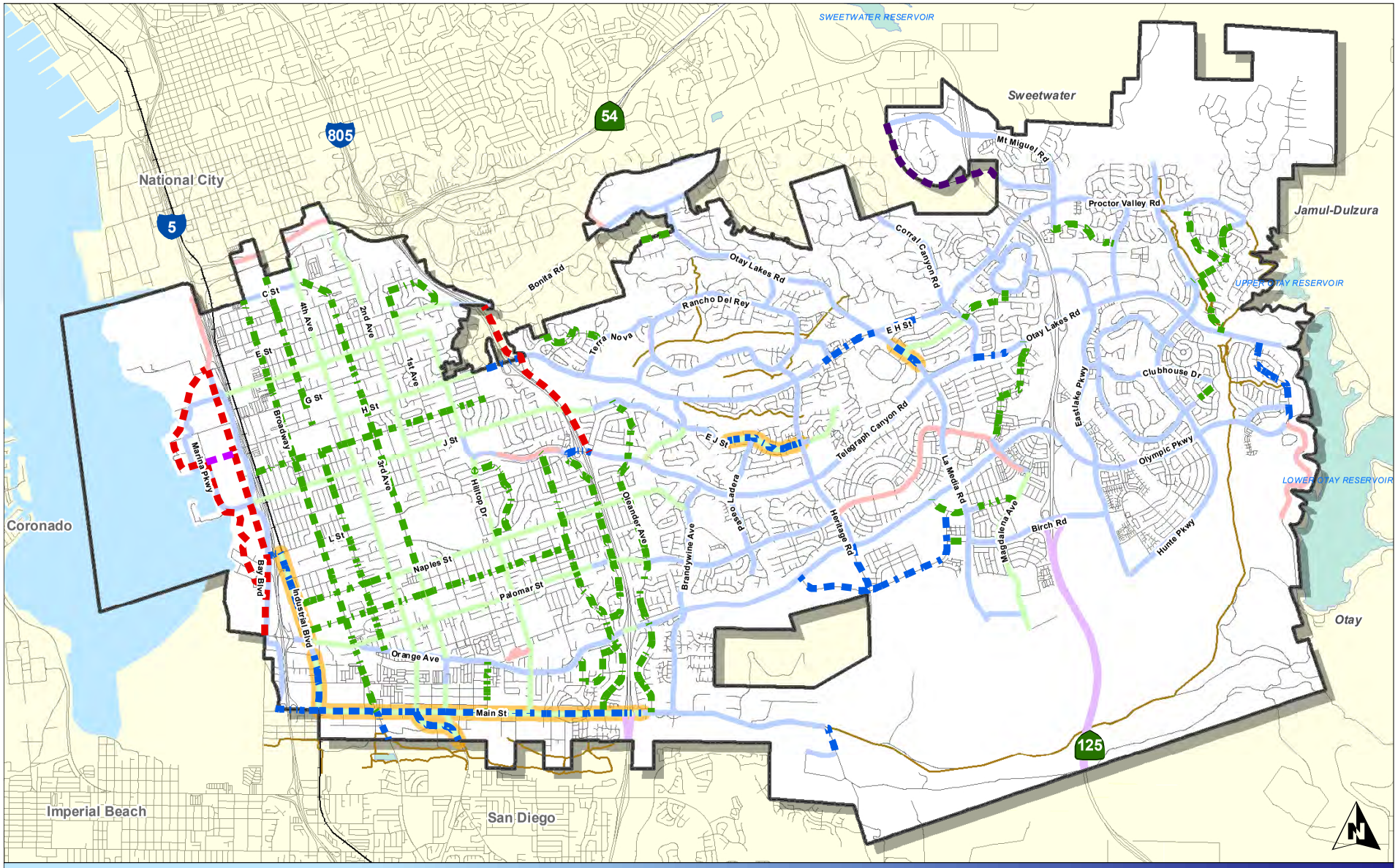


Figure 13: Recommended Bicycle Facilities

City of Chula Vista
Trails
Railroad
Lakes

Existing Bicycle Facilities*
- Class1: Bike Path
- Class 2: Bike Lanes
- Class 3: Bike Route
- Freeway Shoulder

Recommended Bicycle Facilities* **
- Class 1: Bike Path
- Class 2: Bike Lanes
- Class 3: Bike Routes

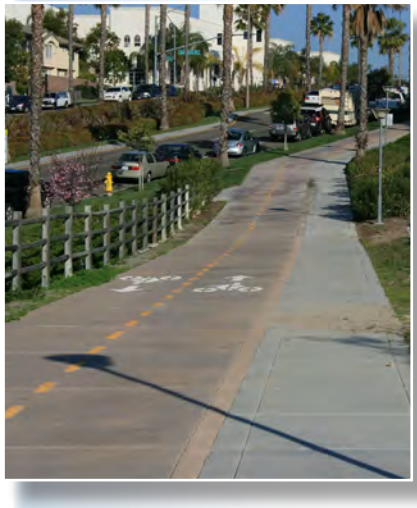
Future Projects
- Class 1: H Street Extension: Funded by SDUPD
- Class 1: Need further coordination with County

Facility Upgrades (From Class 3 to Class 2)**

** Source: KTU+A 2010*
*** Source: 2005 Chula Vista Bicycle Master Plan and CIPs*

4.2 Class 1 Facilities

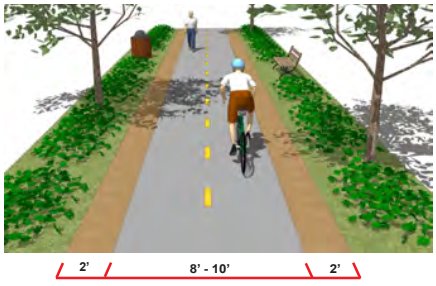
Class 1 bikeways (frequently referred to as bike paths) are facilities with exclusive right-of-way for bicycles and pedestrians with cross flows by motor vehicles kept to a minimum. They are physically separated from motor vehicle routes.



A physical separation of at least five feet is recommended where a Class 1 facility parallels a motor vehicle route. Any separation of less than five feet from the pavement edge of a motor vehicle route requires a physical barrier to prevent cyclists from encroaching onto the roadway. A barrier should be provided anywhere there is the potential for motor vehicles to encroach onto a Class 1 bicycle facility. Class 1 paths immediately adjacent to streets with numerous cross streets are not recommended because they can create safety problems.

Unlike on-street facilities that already have defined minimum design speeds, the minimum design speed of Class 1 facilities is a factor to consider. In general, the minimum design speed should be 25 mph.

Class 1 - Bike Path



The edge of a bike path that is less than five feet from a road must have a physical barrier such as rails, dense shrubs or trees. (Caltrans Chapter 1000)

Provides a completely separated right-of-way for the exclusive use of bicycles and pedestrians with cross-flow by motorists minimized.

Description: Right-of-way separated from motor vehicle traffic. Used where adjacent roadway speeds and the volume of traffic is too high for safe shared use. Also used for connections through open space areas and parks, or where no other facility type is feasible.

Design Guidelines:

- Eight foot paved with two foot graded edge minimum width for two-way use. Greater width is recommended for high use corridors.
- Bike paths adjacent to a highway closer than five feet from the edge of the shoulder shall include a physical barrier (guard rail).

References:
Caltrans Chapter 1000, California MUTCD (Revised 2006), MUTCD 2009

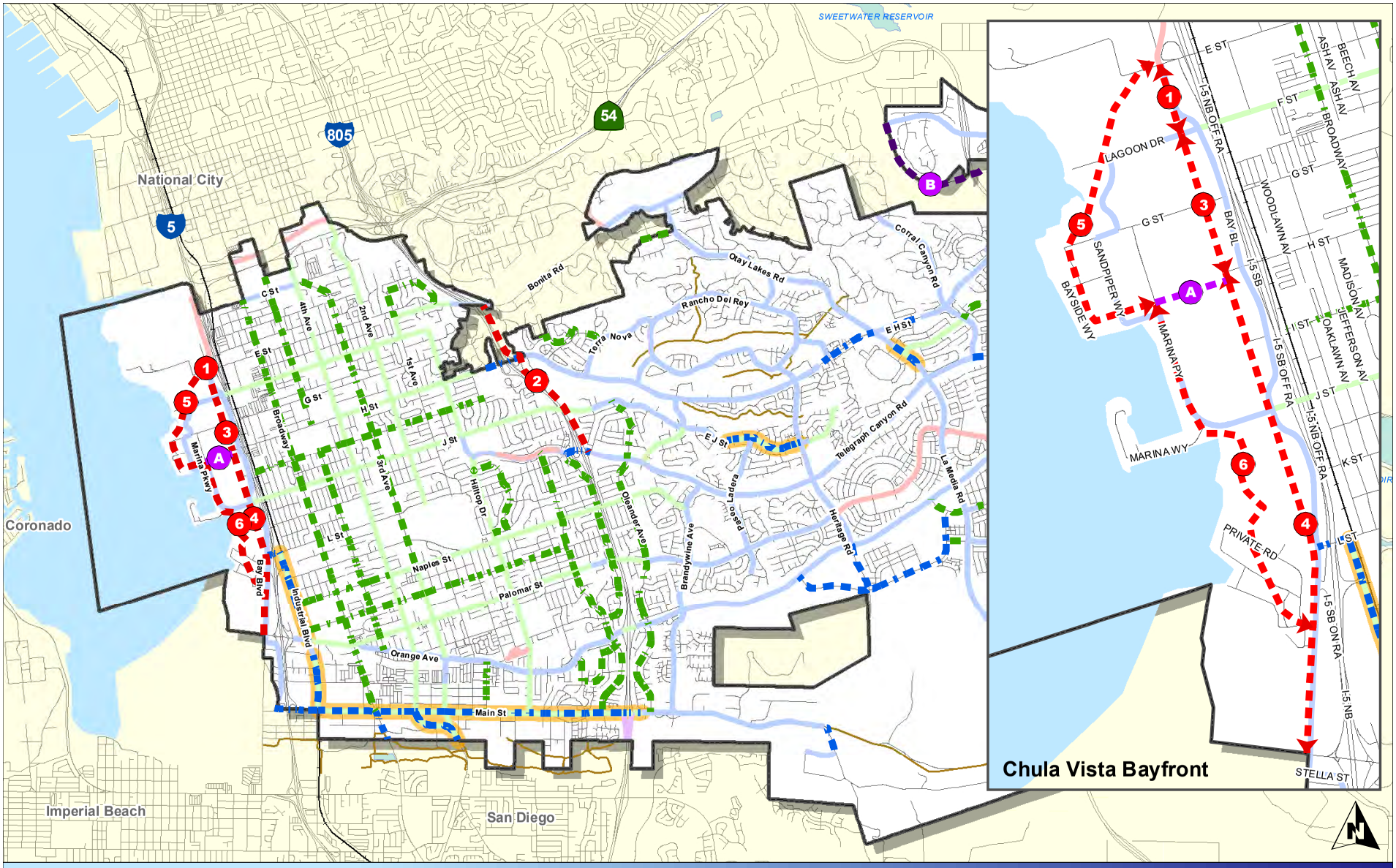


Figure 14: Recommended Class 1 Bike Paths

City of Chula Vista
Trails
Railroad
Lakes

Existing Bicycle Facilities*
Class1: Bike Path
Class 2: Bike Lanes
Class 3: Bike Route
Freeway Shoulder

Recommended Bicycle Facilities* **
Class 1: Bike Path
Class 2: Bike Lanes
Class 3: Bike Routes

Future Projects
Class 1: H Street Extension: Funded by SDUPD
Class 1: Need further coordination with County

Facility Upgrades (From Class 3 to Class 2)**

** Source: KTU+A 2010*
*** Source: 2005 Chula Vista Bicycle Master Plan and CIPs*

Opportunities exist for the installation of Class 1 facilities that would not only provide the relaxed recreational atmosphere associated with an off-street facility, but could also improve commuter connections. Normally, Class 2 facilities are preferred for transportation or commuting purposes. However, if no available roadways exist through an area, these Class 1 facilities can be useful to commuters. Together, these facilities could fill in any gaps in the current system where topography and lack of facilities may currently limit access.

The Class 1 routes proposed in the following pages would be designed for multipurpose use and be paved with asphalt or concrete. The paths should be wide enough (eight feet minimum) to accommodate multiple user types and should include unpaved clear zones (two feet minimum) on each side that can be wider if needed to provide for users who prefer a softer trail.

Though not all within the Chula Vista city limits, completion of the Class 1 portions of the Bayshore Bikeway would be a boon to local and regional cyclists. The Bayshore Bikeway will circumnavigate San Diego Bay within the rights-of-way of the existing rail line and on roadways where the rail line does not exist. The facility will be a paved, multi-use, regional route connecting the coastal cities around San Diego Bay. The remaining portion within Chula Vista is a segment between E and Main Streets. This has been broken into three segments for easier phasing.

The fourth Class 1 facility segment would be within the bus rapid transit (BRT) corridor planned to run parallel with on the east side of I-805 north of Telegraph Canyon Road. This bikeway facility would likely be built in conjunction with the future BRT/managed lanes improvements. At a minimum, the bike path should be accommodated in the design by grading a terrace at least 14 feet in width along the east side of the freeway corridor so that the bike path is not precluded if it has to be constructed separately later.

Future Project A, the H Street Expansion, has already been designed and is funded by the San Diego Unified Port District with completion slated for 2012. The alignment and bicycle facility type for Project B, Proctor Valley Road Bike Path, requires further coordination between the County of San Diego and the City of Chula Vista. The alignment and facility type will be determined based on the allowance of motor vehicles when the connection is made. These alignments were included to show near-term and future bicycle facilities in the overall City bicycle network.

Due to economies of scale and the need for the contractor to perform work on the widened freeway footprint to accommodate the managed lanes, extensive regrading of the freeway shoulders is expected. It is likely that the contractor will require a construction access pathway off the freeway. This terrace along the east side of the freeway could be used initially for construction equipment logistics to minimize freeway traffic impacts. It is therefore strongly recommended that the bike path be included as part of the overall project and to clear it through the managed lanes environmental document. (See Figure 14: Recommended Class 1 Bike Paths and Table 11.)

Table 11

Recommended Class 1 Bike Paths			
Segment Number	**Segment Location**	**Miles**	**Notes**
1	Bay Blvd E Street to F Street	**0.25**	• Continues existing bike path to Goodrich Aerostructures property • Part of Bayshore Bikeway and SANDAG Regional Bikeway Corridor Network • Coordination with San Diego and Arizona Eastern Railway needed to acquire right-of-way • Adequate width available to install 10-12′ wide bike path. Existing ~41' right-of-way • Install pedestrian signal crossing at Lagoon Drive to allow bike path users to travel through intersection and to improve visibility. If warranted, bicycle signal is also recommended • All ramps must meet ADA requirements
2	I-805 Corridor between Telegraph Canyon Road and City limit	**1.68**	• Part of SANDAG Regional Bikeway Corridor Network and South Bay Bus Rapid Transit (BRT) Project (Phase Two) • Phase Two to include managed lanes on I-805 and bike path design could be developed simultaneously. Grading to be done in Phase 1 with completion in Phase 2 • Consistent with Needs and Purpose statement of Environmental Document • Should be included in Phase Two design to ensure connection from downtown Chula Vista to National City and provide economy of scale savings • Provides north-south corridor dedicated to bicycle and pedestrian travel • Connects to proposed bike route on East J Street overpass over I-805 where there are no on- or off-ramps • Access ramps to Chula Vista street network should meet ADA requirements and provide safety measures at intersections. Whenever possible, connections to existing intersections should be planned to utilize pedestrian signals for crossing streets. If warranted, separate bicycle signals and crossing may be implemented
3	Bay Blvd F Street to H Street	**0.51**	• Part of Bayshore Bikeway and SANDAG Regional Bikeway Corridor Network • Coordination with San Diego and Arizona Eastern Railway and Goodrich Aerostructures needed to acquire right-of-way • Adequate width to install 10-12′ wide bike path. Existing ~41' right-of-way • Install pedestrian signal crossing at H Street to allow bike path users to travel through intersection and to improve visibility. If warranted, bicycle signal also recommended • Alternative for this segment may go along the west wide of Bay Boulevard • All ramps must meet ADA requirements
4	Bay Blvd H Street to Bayshore Bikeway/ Palomar Street	**1.71**	• Part of Bayshore Bikeway and SANDAG Regional Bikeway Corridor Network • Coordination with San Diego and Arizona Eastern Railway and San Diego Port District needed to acquire right-of-way • Adequate width available to install 10-12′ wide bike path. Existing ~41' right-of-way • Utilize existing controlled crossing at Marina Pkwy/J Street and Bay Boulevard to allow bike path users to travel through intersection • All ramps must meet ADA requirements
5	Bayfront Project: E to H Streets	**1.22**	• To be developed in phases along with Project 6 as part of the proposed Bayfront Project • Provides coastal route along Chula Vista bayfront
6	Bayfront Project: H Street to Bay Boulevard	**1.40**	• To be developed in phases along with Project 5 as part of the proposed Bayfront Project • Provides coastal route along Chula Vista bayfront • Development dependent on status of South Bay Power Plant south of Marina Parkway
	Total Mileage:	**6.77**	

Future Projects*			
A	H Street Expansion	**0.26**	• Part of H Street Expansion Project funded by San Diego Unified Port District • To be developed in Phase 1, Marina Parkway to east of railroad tracks
B	Proctor Valley Road Bike Path	**1.37**	• Bike path would travel between San Miguel Road and Proctor Valley Road along San Miguel Ranch Subdivision and beneath SR-125 within County • Route partly in County. Coordination needed to make connection into Chula Vista. • Class 1 path if Proctor Valley Road from San Miguel Ranch Road closed to vehicular traffic • If roadway is open to vehicular traffic, Class 2 bike lanes will connect to County
	Total Mileage:	**1.63**	* Projects either underway or in need of further coordination. No cost estimates associated.

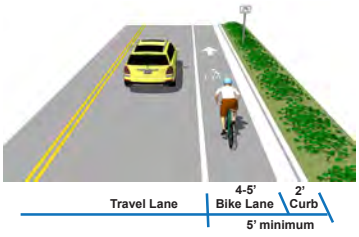
4.3 Class 2 Facilities

Class 2 bikeways (often called bike lanes) are one-way facilities within roadways placed next to the curb or parking lane for the preferential use of bicycles within the paved area of streets. They are designated by striping, pavement markings and signage. Class 2 facilities must be at least four feet wide where no parking occurs and five feet wide where parking does occur. Class 2 facilities are already in place primarily throughout the eastern portion of the City of Chula Vista and are to be included on all programmed major roadways.

A number of Class 2 lane segments are recommended in the eastern portion of Chula Vista to fill gaps in existing facilities along arterials. With the implementation of these segments, the City will have a substantially complete Class 2 system east of I-805. West of I-805, the two longest Class 2 recommendations are on Main Street and on Industrial Boulevard. (See Figure 15: Recommended Class 2 Bike Lanes and Table 12.)

Class 2 - Bike Lane

Colored bike lanes enhance the visibility of cyclists on bike lanes the bike lanes themselves. Color can be applied to the entire bike lane or at high-risk locations where motorists are permitted to merge into or cross bike lanes. This application is not yet approved by the CA MUTCD.



Bike Lane Marking

Provides a striped lane for one-way bike travel on a street or highway.

Description: Provides a striped lane for one-way bike travel on a street or highway. Installed along streets in corridors where there is significant bicycle demand, and where there are distinct needs that can be served by them. In streets with on-street parking, bike lanes are located between the parking area and the traffic lanes.

Design Guidelines:

- Five foot minimum width for bike lanes located between the parking area and the traffic lanes.
- Four foot minimum width if no gutter or parking exists. Including a normal 2-foot gutter, the minimum bike lane width shall be 5 feet.

References:
Caltrans Chapter 1000, California MUTCD (Revised 2006), MUTCD 2009

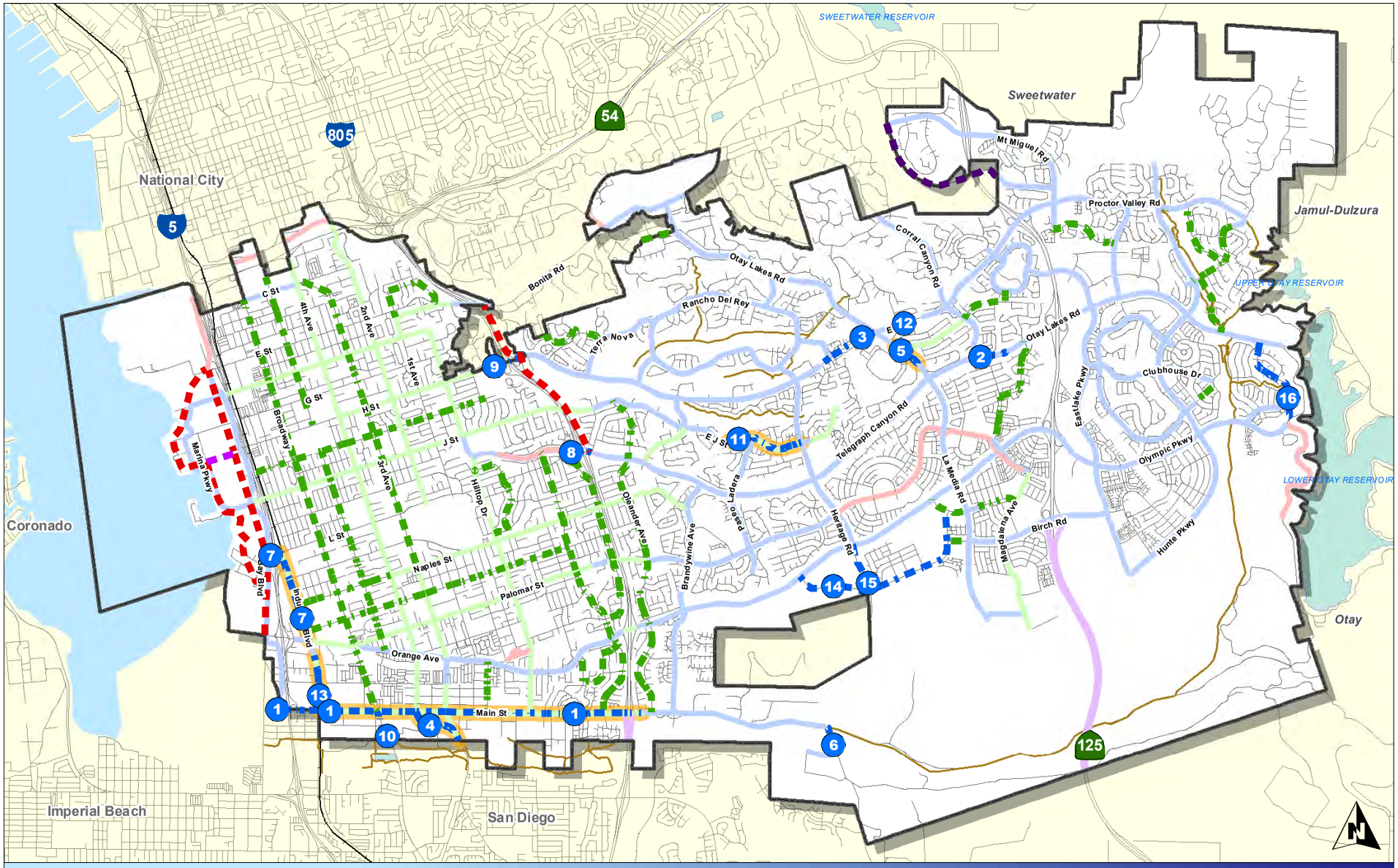


Figure 15: Recommended Class 2 Bike Lanes

City of Chula Vista
Trails
Railroad
Lakes

Existing Bicycle Facilities*
Class1: Bike Path
Class 2: Bike Lanes
Class 3: Bike Route
Freeway Shoulder

Recommended Bicycle Facilities* **
Class 1: Bike Path
Class 2: Bike Lanes
Class 3: Bike Routes

Future Projects
Class 1: H Street Extension: Funded by SDUPD
Class 1: Need further coordination with County

Facility Upgrades (From Class 3 to Class 2)**

** Source: KTU+A 2010*
*** Source: 2005 Chula Vista Bicycle Master Plan and CIPs*

Table 12

Recommended Class 2 Bike Lanes				
Segment Number	**Roadway Segment**	**Miles**	**Limits**	**Notes**
1	Main Street	**2.89**	I-5 to Main Court	• Proposed in 2005 Bikeway Master Plan • Existing Class 3 bike route upgrade to Class 2 bike lane • Existing curb-to-curb width: 60'-81' • Proposed alignment varies from 64' and 5 travel lanes: Four 10' travel lanes, one 12' TWLT and two 6' bike lanes. On-street parking removed • Lane diet traffic calming along narrow section to reduce speeds and wider bike lane to accommodate cyclists • For wider sections, 6' bike lanes and/or 2' buffers recommended to give cyclists buffer between travel lanes and/or on-street parking • Increase bicycle awareness signage and directional signage throughout route. Install directional signage informing cyclists that I-805 is bike route to Palm Avenue in City of San Diego • Colored bike lanes recommended at I-5 and I-805 on-off ramps for greater visibility crossing these intersections • Coordinate with the Main Street Master Plan
2	Otay Lakes Road	**0.30**	Rutgers Avenue to end of existing westbound bike lanes	• Fills westbound gap on Otay Lakes Road. Eastbound bike lane exists • Existing curb-to-curb width: 84' with 3 lanes each way • Reduce left turn pocket buffer to accommodate bike lanes through Rutgers Avenue • RTOL at Otay Ranch Mobile Home Park utilizes space needed for bike lane. Narrow travel lanes and install bike lanes. • Colored bike lanes recommended at high conflict areas around mobile home park entrance and merging out of right-turn only lane approaching Rutgers Avenue • Increase bicycle awareness signage throughout this segment
3	East H Street	**0.57**	End of bike lanes to Otay Lakes Road	• Proposed in 2005 Bikeway Master Plan • Fills gap in Class 2 connection to Southwestern College • Existing curb-to-curb width: 80' • Lacks existing curb-to-curb width to allow 5' bike lanes • Road diet needed from 3 lanes to 2 lanes each way to accommodate bike lanes and reduction of raised center median • Proposed alignment: Four 13' travel lanes, one 14' raised median/TWLT, two 5' bike lanes with 2' buffers. Buffers recommended due to high speed and high traffic volumes
4	Fourth Avenue	**0.51**	Main Street to City Limit	• Connects existing bike lanes on Beyer Rd to Bike Route on Fourth Ave • Existing curb-to-curb width: 73' • Proposed alignment: Four 12' travel lanes, one 9' parking lane, two 6' bike lanes with 2' buffers
5	Otay Lakes Road	**0.27**	Elmhurst Street to Apache Drive	• Proposed in 2005 Bikeway Master Plan • Connects existing bike lanes on Beyer Rd to Bike Route on Fourth Ave • Existing curb-to-curb width: 73' • Proposed alignment: Five 12' travel lanes and two 5' bike lanes • Increase bicycle awareness signage and directional signage to and from college • Future construction phase of CIP Project STM-355

*TWLT = Two-Way Left Turn Lane, RTOL = Right Turn Only Lane, RTOF = Right Turn onto Freeway

Table 12 (Continued)

Recommended Class 2 Bike Lanes				
Segment Number	**Roadway Segment**	**Miles**	**Limits**	**Notes**
6	Heritage Road	**0.27**	Main Street to Entertainment Circle	• Fills Class 2 gap to Cricket Amphitheater and Knotts Soak City • Existing curb-to-curb width: 60' • Proposed alignment: Four 12' travel lanes and two 6' bike lanes. • Increase bicycle awareness and directional signage throughout
7	Industrial Boulevard and L Street	**0.94**	Bay Boulevard to Palomar Street	• Proposed in 2005 Bikeway Master Plan • Connects to existing bike lanes on Industrial Boulevard south of Palomar Street • L Street existing curb-to-curb width: 74' • Proposed alignment: Two 11' inside travel lanes, two 13' outer travel lanes, one 12' center turn lanes and two 5' bike lanes with 2' buffers • Industrial Boulevard existing curb-to-curb width: 34' • Industrial Boulevard proposed alignment: Two 11' travel lanes and two 5' bike lanes • Colored bike lanes recommended at I-5 on-off ramps on both L Street and Industrial Boulevard for greater visibility crossing through intersection • Increase bicycle awareness signage
8	Telegraph Canyon Road	**0.25**	Nacion Avenue to Halecrest Drive	• Proposed in 2005 Bikeway Master Plan • Fills gap in Class 2 facility between Telegraph Canyon Road and Oleander Avenue • Existing curb-to-curb width: 84-104' • Proposed alignment at minimum width (84'): Six 10.5' travel lanes, one 11' TWLT and two 5' bike lanes. Due to high ADTs, road diet not recommended, but bike lanes are • Increase bicycle awareness and directional signage throughout • Colored bike lanes recommended at I-805 on-off ramps for greater visibility crossing these intersections
9	East H Street	**0.37**	I-805 southbound on-ramp to existing bike lanes	• Proposed in 2005 Bikeway Master Plan • Fills gap in Class 2 facility at I-805 • Existing curb-to-curb width: 80-92' • Proposed alignment at minimum width (80'): Five 11' travel lanes, one 11' TWLT/RTOF and two 5' bike lanes with 2' buffers • Increase bicycle awareness and directional signage throughout • Colored bike lanes recommended at I-805 on-off ramps for greater visibility crossing these intersections
10	Broadway	**0.28**	Main Street to City Limit	• Fills gap in Class 2 facility • Existing curb-to-curb width: 56'-68' • Road needs resurfacing and some 90-degree parking switched to parallel parking • Proposed alignment: Two 12' travel lanes, two 8' parking lanes, two 6' bike lanes with 2' buffers

*TWLT = Two-Way Left Turn Lane, RTOL = Right Turn Only Lane, RTOF = Right Turn onto Freeway

Table 12 (Continued)

Recommended Class 2 Bike Lanes				
Segment Number	**Roadway Segment**	**Miles**	**Limits**	**Notes**
11	East J Street	**0.70**	River Ash Drive to Paseo Ranchero	• Proposed in 2005 Bikeway Master Plan • Existing Class 3 bike route upgrade to Class 2 bike lane • Fills gap in Class 2 facility • Existing curb-to-curb width: 48′ • Proposed alignment #1: Two 11′ travel lanes, two 8′ parking lanes and two 5′ bike lanes. TWLT will need to be removed • Proposed alignment #2: Two 12′ travel lanes, one 12′ TWLT and two 6′ bike lanes. Requires removal of on-street parking • Proposed alignment #3: Two 11′ travel lanes, one 11′ TWLT, one 8′ parking lane and two 5′ bike lanes. On-street parking will need to be removed on one side of street • Provide additional directional signage throughout J Street
12	East H Street	**0.25**	East of Otay Lakes Road to east of Auburn Avenue	• Proposed in 2005 Bikeway Master Plan • Fills gap in Class 2 connection to Southwestern College • Existing curb-to-curb width: 64′ • Lacks existing curb-to-curb width to accommodate 5′ bike lanes • Proposed alignment to accommodate existing on-street parking: Two 10′ travel lanes, two 7′ parking lanes and two 5′ bike lanes. Removal of raised median necessary to accommodate bike lanes. Includes left turn pockets at Auburn Avenue • Proposed alignment with removal of on-street parking: Two 12′ travel lanes, one 14′ raised center median, two 6′ bike lanes with 2′ buffers • Buffers recommended due to high speed and high traffic volumes • Increase bicycle awareness and directional signage throughout
13	Industrial Boulevard	**0.50**	Ada Street to Main Street	• Proposed in 2005 Bikeway Master Plan • Connects to existing lanes on Industrial Boulevard north of Ada Street • Industrial Boulevard existing curb-to-curb width: 32′-51′ • Industrial Boulevard proposed alignment for 32′ width: Two 11′ travel lanes and two 5′ bike lanes • Proposed alignment for 51′ width: Two 12′ travel lanes, one 11′ TWTL, two 6′ bike lanes with 2′ buffers. Buffers can be removed and outer lanes expanded to 14′ travel lanes due to heavy truck traffic • Increase bicycle awareness signage
14	Santa Victoria Road	**1.84**	Olympic Parkway to Santa Venetia Street	• Under construction • Provides alternative route to Otay Ranch High School
15	Heritage Road	**0.43**	Olympic Parkway to Santa Victoria Road	• Under construction • Continues Class 2 bike lanes to Santa Victoria Road
16	Lake Crest Drive	**0.88**	Otay Lakes Road to Wueste Road	• Fills gap between Class 2 facilities • Connects Olympic Training Center to Otay Lakes Road and Mountain Hawk Park • Existing curb-to-curb width: 38′-44′ • Proposed alignment (44′): Two 12′ travel lanes, one 8′ parking lane and two 6′ bike lanes • Low volume residential street with infrequent on-street parking • Designating one side of street for on-street parking provides space for installation of bike lanes • Increase directional signage throughout Lake Crest Drive to Otay Lakes Road, Mountain Hawk Park and Olympic Training Center

Total Mileage: **11.25**

4.4 Class 3 Facilities

Class 3 routes are generally recommended where motor vehicle traffic volumes and posted speed limits are relatively low. However, they are also used where a bikeway facility is desired, but the roadway lacks the space for a Class 2 lane. In these cases, the Class 3 route can be enhanced with shared lane markings and signage to help alert motorists to expect the presence of cyclists. The shared lane pavement markings also help cyclists position themselves on the roadway so that they can avoid vehicle doors suddenly opened into their path by inattentive motorists. (See Figure 16: Recommended Class 3 Bike Routes and Table 13.)

Class 3 - Bike Route

Shared Lane Marking

"Sharrow"

Provides for shared use of the roadway with motor vehicle traffic.

Description: Within vehicular right-of-way, delineated by directional signage. Used where roadway speeds and traffic volume are fairly low and shoulder provides adequate room. Bike Routes indicate to bicyclists that there are particular advantages to using these routes as compared with alternative routes. A shared lane marking or 'Sharrow' may be added to guide the cyclist in correct lane placement in higher traffic or parking turnover conditions and to warn motorists of bicycle presence.

Design Guidelines:

- Wider than standard outside lane recommended.
- Because bicyclists are permitted on all roadways (except prohibited freeways), bicycle routes should offer a higher degree of service than other streets.
- Center of Sharrow marking should be at minimum of 11' from curb face.
- Sharrows are only approved for use in the CA MUTCD on streets that have on-street parking.

References:
Caltrans Chapter 1000, California MUTCD (Revised 2006), MUTCD 2009

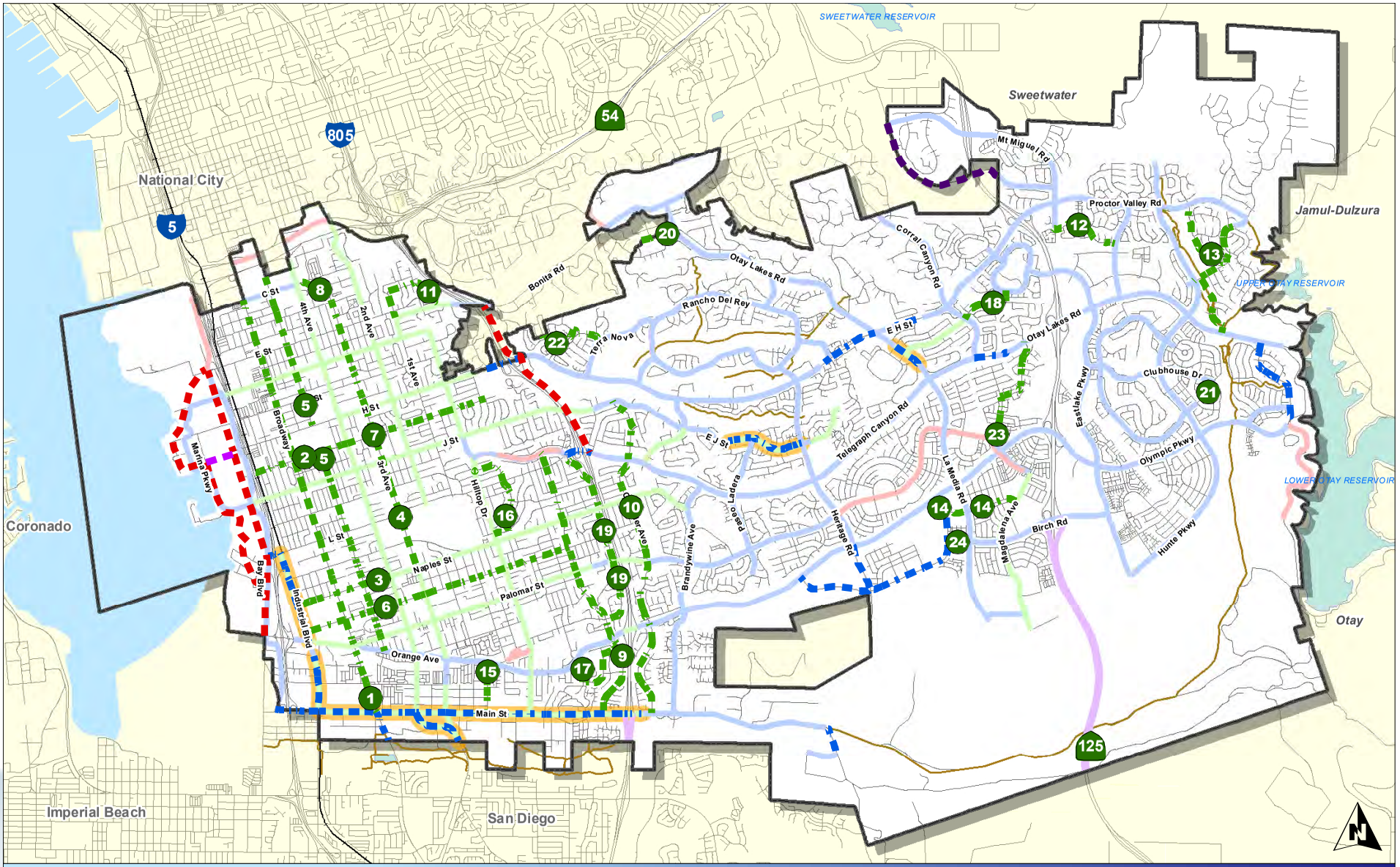


Figure 16: Recommended Class 3 Bike Routes

City of Chula Vista
Trails
Railroad
Lakes

Existing Bicycle Facilities*
Class1: Bike Path
Class 2: Bike Lanes
Class 3: Bike Route
Freeway Shoulder

Recommended Bicycle Facilities* **
Class 1: Bike Path
Class 2: Bike Lanes
Class 3: Bike Routes

Future Projects
Class 1: H Street Extension: Funded by SDUPD
Class 1: Need further coordination with County

Facility Upgrades (From Class 3 to Class 2)**

** Source: KTU+A 2010*
*** Source: 2005 Chula Vista Bicycle Master Plan and CIPs*

Table 13

Recommended Class 3 Bike Routes					
Segment Number	Roadway Segment	Miles	Limits	Install Sharrows	Notes
1	Broadway	**4.16**	C Street to City limit	Yes	• Connects to core commercial district • If warranted, investigate alternatives such as shared lane markings on green bicycle lane similar to Second Street in Long Beach, CA • Increase bicycle parking along this route • Increase bicycle awareness signage and directional signage
2	I Street	**2.17**	Colorado Avenue to Robert Avenue		• Connects to Mueller Elementary School, Chula Vista Center Mall and Hilltop High School
3	Naples Street	**0.86**	Industrial Boulevard to Fourth Avenue		• Fills gap between existing bike route on Naples Street to Industrial Boulevard • Connects to Harborside Elementary School • Increase bicycle awareness signage and directional signage
4	Third Avenue	**1.00**	East J Street to Naples Street	Yes	• Fills gap between proposed enhanced bike route on Third Avenue to bike route south of Naples Street • Increase bicycle awareness signage and directional signage
5	Fifth Avenue	**3.53**	City limit to Orange Avenue	Yes	• Alternative north-south connection to Broadway • Connects to Chula Vista High School, Vista Square Elementary School, Chula Vista Middle School and other private schools • Chula Vista Center Mall creates gap in facility. Route through mall property could include staining/painting shared use path to connect H and I Streets. Directional signage shared lane markings through parking lot another option • Increase bicycle awareness signage and directional signage • This will involve negotiations with mall owner since this is private property
6	Oxford Street and East Oxford Street	**2.44**	Industrial Boulevard to Melrose Avenue	Yes	• Provides an alternative route to Palomar and Naples Streets • Connects to Castle Park Elementary • Candidate for a Bicycle Boulevard • Part of SANDAG Regional Bicycle Plan network
7	Third Avenue	**1.50**	D Street to East J Street	Yes	• Incorporate into Third Avenue Streetscape Project • Increase bicycle parking along this route • If warranted, investigate alternatives such as shared lane markings on green bicycle lane similar to Second Street in Long Beach, CA • Increase bicycle awareness signage and directional signage
8	Third Avenue	**0.39**	C Street to D Street	Yes	• Fills gap between proposed enhanced bike route on Third Avenue to bike lanes on C Street • Increase bicycle awareness signage and directional signage

Table 13 (Continued)

Recommended Class 3 Bike Routes					
Segment Number	Roadway Segment	Miles	Limits	Install Sharrows	Notes
9	Melrose Avenue	2.59	Telegraph Canyon Road to Main Street	Yes	• Proposed in 2005 Bikeway Master Plan • North-south route to connect Kellogg, Palomar and Rohr Elementary Schools • Increase bicycle awareness signage and directional signage
10	Oleander Avenue, Lori Lane and Crest Drive	3.07	East J Street and Main Street	Yes	• Provides north-south connection paralleling I-805 • Connects to Rogers, Parkview and Valle Lindo Elementary Schools • Provides connection to Naples Street and Palomar Street crossings of I-805 where there are no on- and off-ramps • Increase bicycle awareness signage and directional signage
11	Flower Street and First Avenue	0.79	First Street Street to Bonita Road		• Connects to Rosebank Elementary School
12	Mackenzie Creek	1.35	Mt. Miguel Road to Lane Avenue		• Fills gap between Mt. Miguel Road and Lane Avenue • Connects to Marshall Elementary School
13	Woods Drive, Stone Gate Street, Northwoods Drive, Adirondack Place and Duncan Ranch Road	2.00	Proctor Valley Road and Hunte Parkway to Otay Lakes Road	Yes	• Connects to Eastlake Middle School, Salt Creek Elementary School, Montevalle Park and local trail system • Increase bicycle awareness signage and directional signage
14	Santa Venetia Street	0.70	Olympic Parkway to Magdalena Avenue		• Fills Class 2 gap between La Media Road and Windchime Drive • Connects to Otay Ranch High School • Roadway too narrow to accommodate Class 2 bike lanes • Shared lane markings recommended between Olympic Parkway and La Media Road to access high school and pedestrian bridge
15	Albany Avenue	0.46	East Orange Avenue to Main Street		• Connects to Otay Elementary School • Provides bike route between Main Street and Orange Ave
16	East San Miguel Drive, Cuyamaca Avenue and Guatay Avenue	0.98	Vista Way to Hilltop Drive		• Residential loop connects to Cook Elementary School

Table 13 (Continued)

Recommended Class 3 Bike Routes					
Segment Number	Roadway Segment	Miles	Limits	Install Sharrows	Notes
17	Max Avenue, Malta Avenue and Slate Street	0.81	East Orange Avenue to Melrose Avenue		• Residential loop connects to Rohr Elementary School
18	Gotham Street, Creekwood Way and Chateau Court	0.53	Rutgers Avenue, Creekwood Way and Chateau Court		• Proposed in 2005 Bikeway Master Plan • Connects to Southwestern College • Access needed through wall barrier at Chateau Court. Pedestrian and bicycle width cut-through recommended if entire wall not removed • Increase bicycle awareness signage and directional signage • If cutting through the wall is not feasible, then study a route using the easement just north of the homes on Chateau Court between Lehigh Avenue and Creekwood Way
19	East Rienstra Street and Nacion Avenue	1.69	East L Street/Telegraph Canyon Road to Melrose Avenue	Yes	• Provides alternative to Melrose Avenue as north-south connection paralleling I-805 • Provides connection to Naples Street and Palomar Street crossings of I-805 where there are no on- and off-ramps • Increase bicycle awareness signage and directional signage
20	Allen School Lane	0.32	Otay Lakes Road to Allen Elementary School		• Connects to Allen Elementary School
21	Oak Springs Drive	0.22	Silver Springs Drive to South Creekside Drive		• Fills gap to South Creekside Drive • Connects to Salt Creek Park, Arroyo Vista Elementary and local clubhouse
22	Hidden Vista Drive, Smoky Circle and Bayleaf Drive	0.65	Terra Nova to City Limits		• Provides connection to Swetwater community and then to Bonita Road • Utilizes existing access path to connect to Vista Coronado Drive in Sweetwater • Connects to Clearview Elementary School
23	Santa Rosa and Santa Paula Drives	1.04	Otay Lakes Road to East Palomar Street		• North-south connection between H and East Palomar Streets • Increase bicycle awareness signage and directional signage
24	State Street	0.19	Santa Victoria Road to La Media Road		• Fills gap between Birch Road and Santa Victoria Road • Add additional signage for roundabout

Total Mileage: **33.43**

4.5 Other Bicycle Facilities

4.5.1 Undesignated Bike Facilities

These routes are typically indicated on bikeway system maps only, without physical signage or striping. No undesignated bike facilities are proposed in this bikeway master plan update. Typically, undesignated routes are most useful in more densely populated urban areas, but western Chula Vista's typical block size and the number of Class 3 facilities should allow the City's bikeway system to function without the need for this type of facility. However, any bikeway system planning should strive to make as many streets bicycle-friendly as possible.

4.5.2 Urban Access Pathways

In some cases, opportunities to increase intermodal transit use may be available simply by providing convenient access between transit centers and bikeways where none yet exists. Where these urban access paths may prove useful, they would require development of multi-use pathways for non-motorized use because they would naturally attract pedestrian use as well. Therefore, multi-use standards should be implemented in the design of these access paths.

4.5.3 Connections to Urban Centers

Among the criteria used in the selection of routes for this bikeway master plan was the definition of activity and employment centers, as well as GIS evaluation of population and employment densities. These types of data probably best represent what could be called "urban centers." Using this data, new bikeway routes were evaluated to provide the most direct connections possible between these urban centers and the existing transit centers. In many cases, existing bikeways already ran adjacent to transit centers, or an adjacent undesignated roadway was determined to be adequate.

4.5.4 School Access Paths/Safe Routes to School (SRTS)

In most cases, some students at any particular school will get there by bicycle. Many of these children are not experienced, knowledgeable or comfortable with riding on streets in the midst of motor vehicle traffic. For them, alternate routes should be designated to access schools from the surrounding neighborhoods they serve. These routes would utilize lightly traveled streets where riding would be unlikely to pose safety problems for themselves or other users. These routes should also be designed to cross arterials or other high volume streets, when necessary, at specific points with sufficient sight distances, crosswalks, pedestrian signals and, where appropriate, crossing guards. The students for whom these routes are designated should be encouraged to use them. (See Appendix C: Guidelines for Selecting Safe Routes to School.)

The low percentage of children getting to school by bike may simply be symptomatic of the overall decrease in physical activity, widespread dietary changes and more dispersed land use configurations over the last few decades. Some parents also apparently no longer feel safe allowing their school age children to travel to and from school alone. A solution to this problem is beyond the scope of this update, but the situation does not bode well for the percentage of older children and adults who can be expected to use bicycles in the near future. A Safe Routes to School program with parental involvement may help to encourage more bicycle use.

An additional concern is ensuring that school design actually provides safe access from the surrounding community. The City will need to coordinate with the school districts early in the design phase to work to ensure consideration of safe routes to school at the destinations themselves.

4.5.5 Intermodal Facilities

For this bikeway master plan, intermodal facilities included bus stops, trolley stations and park and ride lots. These park and ride facilities need to be accessible to cyclists and should be equipped with bicycle lockers. The three trolley stations could also be improved by installing additional bicycle lockers, as demand requires.

The existing intermodal facility system provides a reasonable level of connection between cycling and public transit. However, only one bicycle is allowed per train during rush hours and two at all other times. New facilities should continue to provide the capability to take bicycles on buses using exterior racks and to continue to provide cyclists the choice to store them at transit centers, such as in lockers. Lockers are highly preferred due to user concerns about theft and vandalism. Also, additional bicycle capacity on trolleys is desirable above the current one or two per train. This should apply to any extension of the existing trolley system and should also be included for the planned Bus Rapid Transit (BRT) system.

4.5.6 Bicycle Boulevards

Bicycle boulevards provide a primary bicycle-friendly route to improve the safety and convenience of bicycling on local streets. Bicycle boulevards are typically installed on residential roadways parallel to nearby arterial roads on routes that have high or potentially high bicycle traffic. Bicycle boulevards are available to motorists, but prioritize bicycle traffic through the use of various treatments. Motor vehicle traffic volume is reduced by periodically diverting vehicles off the street and the remaining traffic is slowed to the same speed as bicycles. Bicycle boulevards are most effective when several treatments are used in combination.

The design features associated with a bicycle boulevard can help to:

- Increase feelings of comfort and safety for pedestrians, cyclists and the community as a whole
- Increase bicycling and walking
- Improve wayfinding
- Discourage neighborhood cut-through motor vehicle traffic
- Calm and reduce neighborhood traffic
- Provide shade for pedestrians and cyclists
- Create a pleasant corridor through the center of the City

The two roadways proposed as bicycle boulevards in this bikeway master plan are Oxford Street and J Street. Both are also noted as candidate routes in SANDAG's *Regional Bicycle Plan*.

4.6 Recommended Bicycle Programs

The League of American Bicyclists (LAB) has developed a set of guidelines called the "Five Es" to assist cities in becoming bicycle-friendly communities: Engineering, Education, Encouragement, Enforcement and Evaluation and Planning. These so-called "intangible" improvements can truly enhance the physical improvements discussed in the previous sections. These criteria are a good reference for any community seeking to improve its bicycle environment.

- **Engineering** develops a safe, convenient and continuous network of bikeways and walkways that serves the needs of all types of cyclists and pedestrians. Maintain and reconstruct existing bicycle facilities and walkways in a manner that promotes safety, increases convenience and minimizes lifetime costs.

- **Education** programs teach motorists, pedestrians and cyclists about their responsibilities and about traffic rules.

- **Encouragement** includes developing awareness and building enthusiasm for walking and biking.

- **Enforcement** includes enforcing current traffic laws to educate motorists and cyclists for the purpose of maximizing the safety of vulnerable road users.

- **Evaluation and Planning** compiles data from surveys and site audits to make sure the program is effectively responding to community needs and parent concerns.

Based on the LAB guidelines, the following recommendations are proposed to begin the process of enhancing Chula Vista's bicycle-friendly environment.

4.6.1 Encouragement Recommendations

A. Expand encouragement efforts during Bike Month.

Have the Mayor and/or the City Council proclaim May as Bike Month and participate in Bike to Work Week events. Host pit stops during Bike to Work Weeks and Days. To increase encouragement, host Bike to Work days more often, such as monthly. Coordinate with other agencies on bicycle events such as "Bike to School Day," a "ciclovia" (See Item E), and bicycle safety courses.

B. Improve bicycle route wayfinding markers.

Signage needs to be improved. Installing standards-compliant signs and markings convey clear bicycle facility information. Directional signage helps new cyclists and tourists alike to find their way to their destination or nearby landmark via a recommended route.

The purpose of signage is to direct people and provide information about destinations, directions and/or distances. It increases comfort, assists navigation, warns of approaching roadway crossings and guides users through diverse environments. In the unfortunate event of an emergency, directional signage provides important location information to a potentially uninformed visitor. When applied on a regional level, wayfinding can link communities and provide consistent visual indicators to direct cyclists to their destinations along the route of their choice. Wayfinding signage can achieve public objectives, such as promotion of a community's attractions, education, mile marking and directional guidance. A good wayfinding system functions to achieve the following purposes:

- Help people find destinations from all travel modes
- Establish clear pathways through the use of signs, maps and other landmarks
- Carry user-friendly and understandable messages

People are the single most important component in developing a wayfinding strategy. By identifying user patterns and destinations, wayfinding users understand how the bicycle facility system operates and how to move through spaces and be directed to their destinations. In designing a wayfinding strategy or system, the following questions need to be considered:

- Who is going to use the wayfinding system?
- Where are the facility users going?
- What do the users or visitors want to see and hear?
- Is the goal navigation, directional information, orientation, location information, or interpretation?
- Is a clear message being sent by the signage?

There are three general objectives in a wayfinding signage system. When determining sign locations and messages, achieving these objectives should guide the wayfinding plan.

1. Get people to the bicycle facilities.
Promote the bicycle network by linking people from the community to the neighborhoods. This promotes the bicycle facilities as both destinations to enjoy and as transportation routes.

2. Warn motorists that there may be cyclists sharing the roadway with them.
Use cautionary and safety messages to increase motorists' awareness of cyclists. Bicycling is an important component of the transportation system and should be respected by other modes of transportation. However, since cyclists are more vulnerable to injury in a collision with an automobile, motorists should pay particular attention to their presence and safety.

3. Inform people how to get around the network.
Guide cyclists through the bicycle facility network, assisting their decision-making ability at intersections and decision points. Show a bike route or lane's role in the larger network visually through maps. Utilizing a sign hierarchy can emphasize certain types of messages. Information on the latest standards on wayfinding signage can be found in sections 9B.19 - 9B.21 of the *Manual on Uniform Traffic Control Devices* (MUTCD), 2009 Edition.

C. Regularly update the City-wide bicycle map.
Regularly updating the city-wide bicycle map will allow residents to plan their routes when using their bicycles. Many residents and visitors are unaware of the existing facilities within the City and may therefore be less encouraged to travel by bicycle. The City's cleverly designed map folds into a small package easily stowed in a pocket or seat bag. It shows facilities, recreation centers, libraries and bike shops, and the shop locations are keyed to associated advertising on the flip side, where users will also find advice on the rules of the road and safety tips.

It is critical to update the map as new bicycle facilities are implemented or current facilities are changed. Annual updating and printing results in a more reliable map.

D. Implement the Boltage Program at schools.
This program's goal is to increase the number of children regularly riding their bikes to school using advanced technology to count and provide incentives.

The ridership numbers are automatically counted and sent to a web site by a Zap machine. Put simply, the Zap machine automatically counts riders and uploads the data securely to this site. For the more technically inclined, the Zap is a solar-powered, eco-friendly radio frequency identification (RFID) tag reader that registers riders' RFID tags placed on their backpacks or helmets. The Zap counts the number of times a child rides or walks to school, then wirelessly uploads the data to the Boltage web site so children can see how close they are to earning a prize. The Boltage program is not a competition between children, classes, or schools. As of October 2010, 34 programs are in place, including in the cities of Santa Cruz and San Francisco. For more information on this program, go to www.boltage.org.

E. Host a Ciclovia event.
Ciclovias are an event where a street is temporarily closed to motorized traffic and open for non-motorized transportation. It becomes a celebration of livable streets and communities, encouraging citizens and businesses to get out in the street and enjoy their city through active participation.

A ciclovía (also ciclovia or cyclovia in English) is a Spanish word that translates as "bike path" and is used to describe either a permanently designated bicycle route or a temporary event, such as the closing of a street to automobiles for use by self-propelled transportation. Bogotá, Colombia, is often credited with starting ciclovias. These events, sometimes referred to as "Sunday Parkways," occur across the United States, including League Bicycle Friendly Communities such as Madison, Wisconsin, Portland, Oregon and Washington, D.C. The events typically occur on Saturday or Sunday on a city's main streets. The selected streets become car-free and only open to pedestrians, cyclists and skaters. Often the closed streets form a circuitous route and are adjacent to a park. In some cities the event occurs once or twice a year, while others occur every Saturday or Sunday throughout the entire summer. The Portland and Chicago events have different locations around the city each weekend. Los Angeles held its first ciclovía in October 2010, which attracted an estimated 100,000 cyclists, runners, walkers and skaters.

Musicians and groups promoting free, healthy activities are often stationed along the route. These elements are a unique mix in each city. The theme is often centered on health, exercise and active transportation.

F. Support business and employer incentive programs.
The City and local businesses can support bicycling and the development of a comprehensive bicycle transportation system as a viable alternative to the automobile. Developing a bicycle system that meets the needs of both commuter and recreational users is only a small part to improve the cycling culture in the City.

The City can promote the LAB's Bicycle Friendly Business program to encourage and facilitate use of alternative modes of transportation by employees and customers. Local business can give discounts, prizes and other incentives to those who frequent their business by bicycle. Similar incentives can be given to their employees who commute by bicycle. The City and local businesses can provide secured bicycle parking, shower and locker facilities to employees to encourage bicycle commuting.

Encourage fringe benefits such as the Bicycle Commuter Benefit Act, which allows employees to reimburse bicycle commuters who regularly use their bicycles for a substantial portion of travel between home and work. Under this program, companies can reimburse their employees on a tax-free basis for reasonable expenses incurred as a bicycle commuter. This can include the actual purchase of a bicycle and almost any type of accompanying equipment and accessories such as lights, racks and clothing, up to the annual limit of $240, or however much the company chooses to offer.

G. Implement a Bike Sharing Program.

Bike sharing is an innovative approach to increase bicycle usage throughout an urban area. Bicycles are becoming the popular choice as an alternative mode of transportation as gas prices, obesity rates and concerns over the environment increase. Providing a bicycle share program, combined with other transportation systems, permits a more diverse, flexible and cost-effective method of alternative transportations. This program can reduce the number of overall vehicle trips and travel time between residences and transit stops, schools and shopping centers.

Successful bicycle sharing programs have been implemented in Canada, Europe and cities like Washington, D.C. and Chicago. Many more cities, colleges and universities are considering or planning to implement these bicycle sharing programs, such as nearby San Diego State University. These systems are highly advanced, using key cards, online advanced purchase, GPS and RFID technologies, making it possible for bike sharing to be smart and simple for all users. Bike fleets can also be implemented by local businesses and cities. Such programs have been successful in cities such as Austin, Long Beach, Tucson and East Lansing, Michigan.

Bike sharing programs such as B-Cycle can even track riders by their associated membership numbers. Data such as distance, duration, calories burned and carbon offset are captured and uploaded to personal web pages at Bcycle.com. This data can also be helpful for those commuting and exercising at the same time.

Providing a pool of bicycles may encourage employees to drive less during the day, such as when running errands. One way to encourage bike sharing programs is to provide incentives to employers to supply bicycles at the work place or by funding through a metropolitan planning organization (MPO) like SANDAG. For example, a city-wide bike sharing program in Long Beach starting in early 2011 will be funded by a grant from the Los Angeles Metropolitan Transportation Authority.

H. Develop a series of short loop rides around Chula Vista.

Southern California is one of the best locations in the United States for bicycle riding. The mild year-round weather attracts many professionals and recreational cyclists throughout the year. Bicycle racing (both mountain bike and road racing) and cycling clubs are great ways to get new cyclists into the sport, which then carries on to daily life such as bicycle commuting. Local cities such as San Diego, Encinitas and San Marcos participate in bicycle racing during the spring. The City can promote the weekly rides organized by local bike clubs such as the Cyclo-Vets, South Bay Wheel Krankers and shops like Pulse Endurance and Trek. The City can start local races that showcase Chula Vista's landmarks. Local races can draw attention to the City and, at the same time, encourage cycling as a fun and healthy sport.

I. Work with the Olympic Training Center.
The Olympic Training Center is a unique asset for the City of Chula Vista. Within it is a BMX park open to the public that the City can promote to encourage cycling. BMX parks are popular among youth, encourage kids to ride bikes and promote bikes as a means of transportation.

The Olympic Training Center hosts road racing, triathlon, BMX and Paralympic Cycling, which includes blind cyclists riding tandem. They also host the Grand Fondo and assist with Cycle EastLake events. Additionally, a BMX Cycling Club meets Tuesdays and Saturdays at the Olympic Training Center BMX track. The City can coordinate its efforts with those of the Olympic Training Center to encourage cycling throughout the City, year-round.

J. Participate in Walk and Bike to School Day.
Now in its 13th year, this one-day event is a part of an international effort in more than 40 countries to celebrate the many benefits of safely walking and bicycling to school and to encourage more families to consider getting out of the car and onto their feet on the way to school in October. Walking and rolling to school also embodies the two main goals of First Lady Michelle Obama's Let's Move! campaign: to increase kids' physical activity and to empower parents to make these kinds of healthy choices.

The National Center for Safe Routes to School, which serves as the clearinghouse for the Federal Safe Routes to School (SRTS) program, coordinates online registration efforts and provides technical support and resources for Walk to School Day. Safe Routes to School programs are sustained efforts by parents, schools, community leaders and local, state and Federal governments to improve the health and well-being of children by enabling and encouraging them to walk and bicycle to school. Safe Routes to School activities range from building sidewalks, to getting motorists to slow down in school zones, to encouraging students to take active trips to school with school-wide competitions. On average, at least 50 percent of Walk to School Day events are part of an ongoing SRTS program each year. For more information, go to www.walktoschool.org.

K. Promote the Walking School Bus and Bicycle Train
These programs are volunteer-based, in which children are assisted by adults to walk or bike to school. This program can be as informal as two families taking turns walking or riding their bikes to school or a more structured route with meeting points, a timetable and a regularly rotated schedule for trained volunteers. Parents often cite safety issues as one of the primary reasons they are reluctant to allow their children to walk to school. Providing adult supervision may help reduce those worries for families who live within walking or bicycling distance of schools.

The City can start with one school as a pilot program and expand to other schools if there is demand. Success with a simple walking school bus or a bicycle train may inspire the community to build a more structured program. This may include additional routes, more days of walking and bicycling involving more children. Alternating days between walking and biking to school can provide variety to a structured program. These programs and volunteer efforts require coordination and potential attention to other issues, such as safety training and liability. These efforts can coincide with other educational programs such as "bike rodeos" at the schools. The participating school principal and administration, law enforcement and other community leaders should be involved to help promote an alternative to automobile travel. For more information, visit www.walkingschoolbus.org.

L. Encourage bicycle businesses to support cycling improvements.
Bicycle retailers have a vested interest in helping make the streets friendlier for cycling. Encourage their participation in many of these events.

4.6.2 Education Recommendations

A. Expand motorist education efforts.
Install additional "Share the Road" signage and include the "Share the Road" message in local driver's education classes. Educating motorists and cyclists alike is an important tool for the safety of those using the roads. The more knowledgeable all users are about the rights and rules each party has, the less potential there will be for conflict and incidents.

B. Have bicycling and motorist education messages added to routine local activities.
Increased education for motorists and cyclists is needed. Increase public awareness of the benefits of bicycling and of available resources and facilities. Getting more people on bikes will also help modify motorists' behavior. In other cities, the primary method of education being used to reach both motorists and cyclists is the LAB's BikeEd Road 1 course.

More educational opportunities such as bike rodeos, public service announcements and increased education at schools are opportunities to be investigated to increase awareness within the City and to demonstrate to more people that bicycling to work or for recreation is easy, safe and fun. A guide to developing a bicycle rodeo created by Cornell University can be found at http://www.bike.cornell.edu/pdfs/Bike_Rodeo_404.2.pdf. The San Diego County Bicycle Coalition (SDCBC) is another local resource to utilize for information and assistance.

C. Create a public education campaign aimed at the behavior of cyclists, pedestrians and motorists.

Develop a traffic calming program designed to makes streets a more pleasant and safer place, which ultimately can reduce the number of traffic-related accidents, injuries and deaths. This program can address traffic problems through the eyes of motorists, pedestrians and cyclists. The intent is to raise public awareness and discussion about peoples' attitudes and actions on the streets. It can offer new ways of thinking and reinforce that laws are to be followed. The City of San Jose has developed a program and strategic objectives for this type of campaign. Information can be found at http://www.getstreetsmarts.org.

Locally, the City of San Diego in partnership with SANDAG and SDCBC has created a public education campaign entitled "Lose the Roaditude." More information can be found at http://losetheroaditude.com.

D. Continue to expand the Safe Routes to School program and encourage all schools to get involved.

Encouraging schools to participate in the Safe Routes to School program may increase the number of children that ride their bikes or walk to school. Inactivity among children is a health issue, one that must be taken seriously. In the age of computers, the Internet and virtual reality gaming, outdoor activity has taken a back seat to indoor entertainment. Bicycling to school is a way to get children active and to introduce exercise into their daily routine. Many parents feel that riding a bike on the street is unsafe and do not allow their children to ride to school. Bicycle safety education is important and can be incorporated into after school activities for both children and parents.

The City should assist with "bike rodeos" and other bicycle education programs for City schools. Funding is available at both the Federal and state level for a Safe Routes to School program. This funding can be used for a variety of activities including site specific evaluation and planning, infrastructure costs and education programs. Assistance with funding applications and program facilitation is available from local non-profits WalkSanDiego and SDCBC. More information can be found at: http://www.saferoutesinfo.org.

The following are steps to begin the development of a Safe Routes to School Program:

- Include youth perspectives in the development of the Safe Routes to School improvement plan.
- Determine areas of the improvement planning process that student perspectives will be most useful.
- Have students make field observations and conduct assessments on their knowledge, attitudes and beliefs around Safe Routes to School concepts.

- Integrate student assessments into the planning process.
- Identify a youth Safe Routes to School liaison at the participating school district and/or school.
- Use the SafeRoutes toolkit for in-depth descriptions of classroom activities to educate students during the assessment step: http://www.saferoutesinfo.org/resources/index.cfm.

Step 1: Form a Safe Routes to School Task Force that involves parents, school administrators and teachers, neighbors and community organizations, City officials and staff members, and students.

Step 2: Evaluate existing conditions through parent surveys, student surveys, traffic counts, injury data, speed checks, safe routes checklists and policies relevant to school travel modes and physical activity (e.g., P.E. requirements, recess time and after-school activities).

Step 3: Expand the circle of knowledge by presenting findings to the community, holding a design workshop, having an open house and convening a strategy meeting.

Step 4: Develop a project list and accompanying map by identifying problem areas, setting priorities, grouping projects by geographic area, identifying short-term and long-term solutions, costing out the program and using the whole toolbox of solutions (education, encouragement, enforcement and engineering).

Step 5: Make the plan official by going through the regular planning process and having the plan adopted by the City.

Step 6: Get improvements funded by developing a funding program, identifying funding opportunities and applying for grants.

E. Institute a bicycling education program through the City schools or through the City's Parks and Recreation Department.

Teaching students how to safely ride their bicycle on the streets of Chula Vista is an important element in making the City a safer place to ride a bike. It is critical to educate children on the proper rules of the road when riding their bikes to school and other activities. There are numerous examples of successful programs throughout the country. Education programs will need support from the school administration, teachers, parents and community. Education should be considered as essential, if not more essential, than new bicycle facilities.

Among existing programs, the Texas SafeCyclist curriculum is nationally recognized as a comprehensive bicycle safety education course. It is directed at fourth and fifth grade elementary school physical education teachers and their students. In an attempt to institutionalize bicycle safety and physical fitness standards in Texas schools, the Texas Bicycle Coalition Education Fund (TBCEF) sends field instructors to school districts across the state to train and certify P.E. teachers in the program so that they may, in turn, train their students in bicycle and pedestrian safety education. Teachers report that the SafeCyclist curriculum is easy to implement in the classroom and that students enjoy the materials.

Currently, with the financial support of the Texas Department of Transportation (TxDOT), the U.S. Department of Education and committed private and member donors, TBCEF is able to offer the certification training and all curriculum materials to each participating teacher for free. The Texas SafeCyclist Program has gained both national and international recognition and is considered the model for youth bicycle safety education. In 2003, the National Highway and Traffic Safety Administration (NHTSA) conducted an evaluation of the program and concluded that the program positively influenced children's behavior, essential skills and knowledge.

The SDCBC can be the liaison to start a program similar to the Texas SafeCyclist. With local certified League Cycling Instructors (LCIs) and a strong bicycle advocacy stance, the SDCBC would be the most qualified organization to produce such a program for the City.

If it is not possible to fit in the current curriculum or budget, this program can be a successful after school or summer school program. Seeking financial support from a local private source, such as a health care provider, is also an option.

F. Implement a program to encourage proper helmet use.

There are many resources available for assistance with curriculum, materials and information about bicycle safety and specifically helmet usage, fitting and safety statistics. The California Department of Public Health lists California-specific resources for teachers and parents: http://www.cdph.ca.gov/HEALTHINFO/INJVIOSAF/Pages/BicycleSafety.aspx.

The Brain Injury Law Center has conducted CPSC-certified helmet giveaways for persons 19 years old or younger, anywhere in the United States. For more information visit: http://www.brain-injury-law-center.com/about-us/helmets-for-kids.html.

The Bicycle Helmet Safety Institute is another resource with a wealth of information, links and free toolkits. It is a small, active, non-profit consumer-funded program providing bicycle helmet information at http://www.bhsi.org.

4.6.3 Enforcement Recommendations

A. Encourage the Police Department to use targeted enforcement to educate motorists and cyclists of traffic laws and to share the road.
This could be in the form of a brochure or tip card explaining each user's rights and responsibilities. Encourage the Police Department to warn and educate cyclists and pedestrians about breaking the laws, the rules of the road and safety procedures. This will help educate law enforcement, motorists, pedestrians and cyclists alike. Possible traffic safety problems where enforcement is part of the solution include the following:

- Speeding in school zones
- Illegal passing of school buses
- Failing to yield to pedestrians in crosswalks
- Parking violations – bus zone, crosswalks, residential driveways, time zones
- Risks to pedestrians and cyclists during drop-off and pick-up times
- Lack of safety patrol/crossing guard operations
- Unsafe pedestrian and bicycle practices
- Other traffic law violations in school zones
- Crisis management/incident response

B. Designate a Police Department liaison for the cycling community.
This liaison would be the main contact for residents concerning bicycle-related incidents. A liaison that serves the cycling community is an integral piece of communication between law enforcement and the cycling community. The liaison would be in charge of educating fellow police officers about bicycling rules, etiquette and behavior to better serve both motorists and cyclists alike. Allocate funding for the training and support of this duty, as well as for necessary bicycle equipment.

C. Establish a process for referrals to law enforcement.
Design a communication process that encourages students and parents to notify the school and police of the occurrence of a crash or near miss during school commute trips involving auto, bus, pedestrian, or bicycle transportation. Include the Chula Vista Police Department and Public Works in this reporting system to help produce more valuable data.

D. Enlist the help of law enforcement with a number of traffic safety duties:

- Enforce traffic laws and parking controls through citations and warnings.
- Target enforcement of problem areas through an intensive, focused effort during the first two weeks of school and as a strategy for the rest of the year.
- Participate in a School Safety Committees and Safe Routes to School task force to help identify safety problems and solutions.

4.6.4 Engineering Recommendations

A. Consider adopting a "Complete Streets" policy.

Every street should accommodate cyclists, pedestrians, motorists and transit users. A complete streets policy will enhance the effectiveness of bicycle use throughout the City by having facilities that accommodate bicycle travel, as well as pedestrians and motorists. (This has now been codified in California as AB 1358, the Complete Streets Act of 2008.)

B. Continue to expand and maintain the bicycle network.

Expand bicycle access to all parts of the City through a signed network of on- and off-street facilities, low-speed streets and secure parking. Assist cyclists to cross barriers (including Interstates 5 and 805) and to reach their desired destinations in a convenient, timely and comfortable manner on a bicycle route network. Consider bicycle-friendly design using new technologies and innovative treatments at intersections and on roadways and bikeways. Install bicycle stencils and bicycle-sensitive loop detectors (or other detector type) on bikeways as part of new signals, signal upgrades and resurfacing/re-striping projects conforming to the latest MUTCD guidelines (See Section 1.5.2). More facilities within the bicycle network will encourage bicycle use as a transportation and recreation mode. Motorists will note increased bicycle use throughout the City, which acts as a recurring reminder to safely share the road. Implement the facilities recommended in the bikeway master plan through prioritized increments or available funding.

Local cyclists should be involved in identifying maintenance needs and ongoing improvements and the City can encourage this vigilance with a reporting form on a City web site. Develop a maintenance schedule for bicycle facilities. This includes regular sweeping and removal of debris. When the City or other agencies such as utilities do any roadwork repairs, the road shall be restored to satisfactory quality, with particular attention to surface smoothness and restriping suitable for cycling.

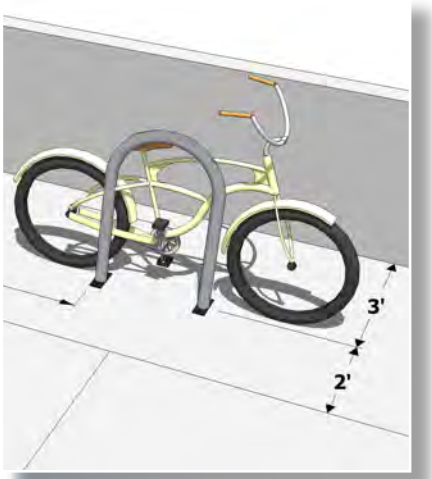
C. Provide training opportunities for engineering, planning staff and law enforcement on how to accommodate cyclists.

Provide training opportunities for engineering, planning staff and law enforcement on how to best accommodate cyclists. Help City staff to better understand cyclists' needs and behavior, their right to use City streets, as well as multi-use paths for transportation. For example, in California a source for outside evaluation is the Institute of Transportation Studies at the University of California, Berkeley, one of the world's leading centers for transportation research, education and scholarship. Its mission is to conduct research and provide instruction to transportation professionals. Additionally, the City can contact the SDCBC for staff training available on a fee-for-service basis.

D. Increase the amount of secure bicycle parking.
Provide plentiful, high quality bicycle parking facilities to complement the bicycle route network consistent with SANDAG *Regional Bicycle Plan*. Increasing bike parking, especially in areas of high bicycle traffic, will encourage bicycle use and give cyclists a safe place to park their bikes. Provide short- and long-term bicycle parking in employment centers and multifamily developments, at schools, special events, recreational areas and transit facilities. If there is a safe, weather-proof place to park their bicycles, employees may be more inclined to commute by bicycle to work. Bicycle racks should be monitored for rust and disrepair. See Appendix A for more information on how to select and install bike racks.

E. Promote intermodal travel.
The City can do this by increasing connections between public transport and bicycles and by improving access and bicycle parking at the bus stops and other public transport vehicles. This can be enhanced by distributing information on cyclists' ability to put their bikes on a bus rack, trolley and travel around and outside the City without the use of a motor vehicle. More bicycle spaces on trolleys are recommended, for example.

F. Identify opportunities to make engineering improvements.
The City has done a good job of identifying pedestrian needs with improvements near schools, such as curb extensions, truncated domes and median refuges. The City can do the same for cycling by continuing the effort to engage the public and school officials to improve facilities at all the schools. It is important to promote walking and biking to schools, transit stops and shopping centers. Examples of items to address are:



- Traffic control signs in school zone – legible, visible and placed properly
- Curb and pavement markings – crosswalks, parking controls and bike lanes
- Signal timing adjustments – especially during morning and afternoon peak times, to allow more time for children to cross the street
- Vegetation trimming and object removal from sidewalks and paths
- Drop-off/pick-up operations – safe, efficient, monitored and enforced
- Off-street lots for drop-off/pick-up
- Parking controls – bus zone, ADA spaces, truck loading, no parking and time zones
- Traffic safety monitoring, supervised crossings and school zone enforcement

4.6.5 Evaluation and Planning

Recommended Planning Actions:

A. Integrate development of the cycling network into larger land use planning and development projects.
Future business, park and residential developments need to take into account bicycles as a mode of transportation and to incorporate appropriate facilities to meet cyclists' needs. Secured bike parking such as racks or lockers, as well as showers and changing rooms, are a few examples of

incorporating facilities within new developments, along with bike paths and bike lanes. As a condition of project approval, require development projects to construct adjacent bicycle facilities included in the proposed bicycle system and provide adequate bicycle parking.

Coordinate bikeway improvements to coincide with already scheduled and funded projects to minimize any overlapping costs or work. For example, include bikeway and pedestrian improvements in the City's capital improvement program (CIP) to coincide with pavement repairs and resurfacing projects.

B. Establish a Bicycle Advisory Committee or Working Group.
Establish a Bicycle Advisory Committee or Working Group to assist the City with implementation of this plan's projects, policies and programs. The creation of a working group allows city staff, volunteers and bicycle advocates to continue efforts to improve cycling throughout the City. A focused group can act as community liaisons and can quickly address local cyclists' issues and concerns. The group can monitor implementation and regularly evaluate the bikeway master plan. City support for budgeting time and resources for City staff to attend and support these meetings is also recommended.

C. Promote consistency and cooperation.
Strive for intra-agency coordination within the City to ensure the City's bikeway master plan is incorporated at every level of transportation planning, engineering and design. Ensure all City policies, plans, codes and programs are updated and implemented to take advantage of every opportunity to create a more bicycle-friendly community. An integrative approach results in creative funding opportunities, synergistic teamwork and successful projects. An example is a Portland, Oregon program integrating traffic calming measures and stormwater retention. Intersection curb extensions were installed to serve as a traffic calming measure, but their design also served as stormwater catch basins. This ingenious program is called Portland's "Greenstreets Program" and allowed the city to utilize stormwater retention funding to install otherwise costly traffic calming infrastructure that also improved the local urban visual environment.

Cooperation should also extend beyond city limits. Coordinate with adjacent military, local and regional agencies to ensure strong bicycle connections and inclusion of the City's bikeway master plan in other planning efforts.

D. Create a Bicycle/Pedestrian Coordinator city staff position.
The position of a bicycle coordinator or program manager can help coordinate between different city departments to ensure consistency and cooperation in planning projects. A Bicycle/Pedestrian Coordinator would run programs and implement projects in the community's bicycle and pedestrian plans. The coordinator would be responsible for implementing Chula Vista's bikeway master plan in a timely manner and maintaining a prioritized list of improvements, updated cost estimates and appropriate

funding sources. Coordinators are critical to integrating bicycling into a city's plans and projects and the investment in a city staff position shows that the city is committed to a complete streets transportation system. This investment is also often returned since this position usually is responsible for securing state and Federal funding for bicycle projects. In many cases, a part-time coordinator is sufficient, depending on the size of the city.

E. Recommended evaluation actions.

1. Develop a Bicycle Report Card.

The City could develop a bicycle report card, a checklist used to measure the success of bikeway master plan implementation and actions within the City of Chula Vista. The report card could be used to identify the magnitude of accomplishments in the previous year, since inception and any general trends.

The following list represents a wide menu of factors that the City could present in a report card including, but not limited to, the following categories:

- System completion
- Travel by bicycle (counts)
- Safety
- Funding

As opposed to focusing on the actual annual change in a given category, the City could establish the report card to track trends. For example, an upward trend in travel by bicycle would be viewed as a success, regardless of the specific increase in the number of cyclists. Safety should be considered relative to the increase in cyclists. Sometimes crashes increase simply because ridership increases, at least initially. Instead measure crashes as a percentage of an estimated overall mode share count.

A major portion of the bicycle report card could be an evaluation of system completion. An upward trend would indicate that the City is progressing in its efforts to complete the bicycle network identified in this document.

The report card could be updated annually and could be expanded to include elements of other transportation modes in the City, such as public transit. The report card could be developed to utilize information collected as part of annual and on-going evaluations. The report card is not intended to be an exhaustive effort for City staff, but rather a straightforward means of conveying the results of the City's recent efforts to the public.

If a committee is appointed to help implement the bikeway master plan and guide future progress as it relates to bicycling in the city, it can be a task of the committee to review the progress of the report cards and to make recommendations to adjust future plans and goals accordingly.

2. Review cyclist/motorist collisions.
Continue to collect and track bicycle collision data. Traffic collisions involving cyclists could be reviewed and analyzed regularly to develop plans to reduce their frequency and severity. Any such plans should include Police Department involvement and should be monitored to determine their effectiveness. Results of the number of bicycle-related traffic collisions should also be recorded for inclusion in the bicycle report card.

3. Conduct annual and/or seasonal bicycle counts throughout the City.
Conduct regular bicycle counts throughout the City to determine mode share baseline and changes. Gathering bicycle counts would allow the City to collect information on where the highest bicycle activity occurs. This assists in justifying and prioritizing projects when funding is sought or acquired. Bicycle counts can be advantageous in collecting data to study cycling trends throughout the City. Analyses that could be conducted includes:

- Trends in volume
- Changes in volumes before and after projects have been implemented
- Determining needs for non-motorized facilities
- Trip generation rates
- Prioritization of local and regional projects
- Air quality changes with increased bicycle use
- Traffic impacts

Future bicycle counts should be conducted annually at the locations employed for the initial set of counts conducted for this bikeway master plan update. In addition, in the interests of continuity, the counts should occur at the same relative times as the initial counts were taken (See Appendix I).

In addition, bicycle counts should be collected as part of any existing traffic counts. Results of the number of cyclists should be regularly recorded for inclusion in the bicycle report card.

4. Quantify Encouragement Efforts
As part of education and encouragement goals (See Sections 4.6.1 and 4.6.2), the City should strive to conduct at least three bicycle-related encouragement events per year and tally participation. Examples of encouragement events include bike-to-work day events, bicycle rodeos, ciclovias, etc. The annual tally of events could be completed in conjunction with completion of the bicycle report card.